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09/458,897	12/10/1999	TOM GIAMMARRESI	SEDN/047	9422

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EXAMINER

SHANG, ANNAN Q

ART UNIT	PAPER NUMBER
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2623

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/458,897	Applicant(s) GIAMMARRESI, TOM	
	Examiner ANNAN Q. SHANG	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/31/08 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 3-21 have been considered but are moot in view of the new ground(s) of rejection.

With respect to claims 1 and 3-21 rejected under 35 U.S.C. 103(a) as being unpatentable over **Goldszmidt et al (6,195,680)** in view of **Ohran et al (5,812,748)**, Applicant, cites MPEP with respect to obviousness and argues that the prior art of records, fail to teach or suggest the claimed limitations, i.e., "...concurrent processing different sub-parts of session-state of the video session data of the video session at said primary head-end controller and said at least one secondary head-end controller..."(see page 8 of 13+ of Applicant's Remarks).

In response to Applicant's amendments/arguments, Examiner disagrees with Applicant. Examiner notes Applicant's amendments/arguments, however, Goldszmidt clearly discloses the server (Fig. 1-3) which performs concurrent processing of session-

state data of the video session using a distributed managing module associate with the server controller, i.e., el. 2.1 of Fig. 2 or 3.1 of Fig. 3 by maintaining the delivery of the multimedia stream to the client 2.5, for example Fig. 3(a) the original connection link 3.9 fails, the control server 3.1 redirects the requested multimedia stream from server 3.6 to server 3.7 through link 3.12 under the request from the client agent 3.5 where the client continuously receives the real-time multimedia stream with minimal disruption.

Goldszmidt clearly discloses concurrently processing different sub-parts of session-state data of the multimedia session using control server (head end controller) and at least one secondary control server (col.3, lines 6-40, col.4, line 29-col.5, line 1+, col.6, line 8-col.7, line 22 and col.8, line 7-col.9, line 1+). Goldszmidt does not disclose is a dedicating secondary head-end controller (similar to server controller 2.1 of Fig. 2 or 3.1 of Fig. 3) having the same managing module for concurrently processing of the session-state data of the requested video session through a distributed managing module environment. To cure this deficiency, Ohran discloses a dedicating 2nd server in which the processing of any (sub-parts) session-state is processed through distributed managing module concurrently on both primary server and secondary dedicated server in which the distributed managing module is associated with both primary and secondary dedicated server (see Fig. 7; Col. 11, lines 51-Col. 12, line 6). As discussed above, the combination of Goldszmidt and Ohran, produces a system having two (2) server controllers, i.e., a primary server controller 3.1 and secondary dedicating server controller 3.1', as taught by Ohran, which performs concurrent processing of any session-data of the video session (requested video session from a client) using a

distributed managing module on both primary and secondary dedicated server controllers and to further utilize the resource of both redundant server controllers. Moreover, the combination increases the system fault-tolerance by reducing the downtime to zero (0). With respect to the office notice taken by the Examiner as to claim 9, Examiner hereby cites **Perlman et al (5,978,381)**, which disclose a caching server, which caches requested data via other servers (figs.1, 2 and col.4, lines 17-46). Hence, Applicant's amended claims do not overcome the prior arts of record as discussed below. **This office action is non-Final.**

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Goldszmidt et al (6,195,680)** in view of **Ohran et al (5,812,748)**.

Claim 1. A method of distributing and sharing processing loads and increasing fault tolerance between provider equipment and subscriber equipment of an interactive information distribution system (summary; Col. 3, lines 12-55), comprising the steps of:

Receiving, at a headend, a request for video information from said subscriber equipment (Col. 5, lines 25-31; Col. 6, lines 40-60);

Executing a video session from at least one of a plurality of managing modules

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on a primary head-end controller at the headend (Control server 1.1 of Fig. 1, col. 6, lines 7-31 in which is described in Col. 9, lines 48-52 of US 5918017 incorporated by reference in Goldszmidt, see Fig. 10 with two of Gateway/TCP-Router nodes, 1st one is 1050 configures as a primary and the 2nd one 1030 as a backup);

Dedicating, at the head-end, at least one secondary headend controller (Control server 1.1 of Fig. 1, col. 6, lines 7-31 and the 2nd Gateway/TCP-Router node, i.e., 1030 as a backup which is described in Col. 9, lines 48-52 of US 5918017 incorporated by reference in Goldszmidt) respectively having the at least one managing module (see Col. 9, lines 48-52 of US 5918017 with el. 320, 340 and 1020) as a resource for executing said video session, where the executing the video session comprises processing different sub-parts of session-state data of the video session at the primary head-end controller and the at least one secondary head-end controller, using a managing module (Manager 320; see Col. 7, lines 3-Col. 9, lines 8 in which is further described in the configuration of Fig. 10 of an encapsulated cluster with high availability Gateway/TCP-Router node, Col. 9, lines 48-60 of US 5918017 incorporated by reference in Goldszmidt) associated with the primary head-end controller and the at least one secondary head-end controller;

Storing the session-state data from the executed video session on at least one storage device (Col. 9, lines 66-Col. 10, lines 22 of US 5918017 incorporated by reference in Goldszmidt); and

Streaming, from a stream server (Fig. 1, el. 1.2 and 1.3; Col. 5, lines 32-35), the video information to the requesting subscriber equipment during a normal mode of

operation (col.3, lines 6-40, col.4, line 29-col.5, line 1+, col.6, line 8-col.7, line 22 and col.8, line 7-col.9, line 1+), note that server (Fig. 1-3) which performs concurrent processing of session-state data of the video session using a distributed managing module associate with the server controller, i.e., el. 2.1 of Fig. 2 or 3.1 of Fig. 3 by maintaining the delivery of the multimedia stream to the client 2.5, e.g., fig. 3(a) the original connection link 3.9 fails, the control server 3.1 redirects the requested multimedia stream from server 3.6 to server 3.7 through link 3.12 under the request from the client agent 3.5 where the client continuously receives the real-time multimedia stream with minimal disruption.

Goldszmidt does not clearly disclose the secondary dedicating head-end controller (similar to server controller 2.1 of Fig. 2 or 3.1 of Fig. 3) having the same managing module for concurrently processing of the session-state data of the requested video session through a distributed managing module environment.

However, **Ohran** discloses a dedicating 2nd server controller in which the processing of any (sub-parts) session-state is processed through distributed managing module concurrently on both primary server and secondary dedicated server in which the distributed managing module is associated with both primary and secondary dedicated server (see Fig. 7; Col. 11, lines 51-Co1.12, line 6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Goldszmidt to have distributed managing module concurrently active on both servers (for example, two (2) server controllers, i.e., a primary server controller 3.1 and secondary dedicating server controller 3.1' that are

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able to perform concurrent processing of session-data of the video session (requested video session from a client) using a distributed managing module on both primary and secondary dedicated server), as taught by Ohran so to fully utilize the resources of both redundant servers, as suggested by Ohran (Col. 12, lines 1-6) and Specifically increase the system fault-tolerance by reducing the down-time to zero (0).

As to claim 3, Goldszmidt further discloses wherein said executing said video session further comprises executing said video session on at least one non-distributed managing module (Executor 340, Fig. 5, Fig. 10, and Col. 4, lines 10-Co1.5, lines 13 of US 5918017 incorporated by reference in Goldszmidt) associated with said primary head-end controller.

As to claim 4, Goldszmidt in view of Ohran further discloses the steps of: processing said session-state data through at least one distributed managing module concurrently on the primary head-end controller and the at least one secondary head-end controller and the at least one secondary head-end controller, wherein the at least one distributed managing module on the primary head-end controller and the at least one secondary head-end controller is in active mode ("co: standby", see Ohran Col. 11, lines 52-65) and processing the session state data from the at least one non-distributed managing module on the primary head-end controller (Executor 340, Fig. 5, Fig. 10 of US 5918017 incorporated by reference in Goldszmidt), wherein the at least one non-distributed managing module on the primary head-end controller is in an active mode (Col. 6, lines 50-57 and Col. 9, lines 48-60 of US 5918017 incorporated by reference in Goldszmidt), and wherein the at least one non-distributed managing module on the

secondary head-end controller is in a standby mode (Col. 6, lines 20-31 in Goldszmidt).

As to claim 5, Ohran further discloses a method comprising the steps of:
processing said session-state data produced by said primary headend controller via
said at least one secondary headend controller in a failure mode of operation, wherein
said primary head-end controller becomes inoperative (Col. 11, lines 64-67).

As to claim 6, Goldszmidt (Col. 6, lines 16-31 and see Col. 10, lines 65-Co1.11,
lines 40 of US 5918017 incorporated by reference in Goldszmidt) in View of Ohran
further discloses comprising the steps of:

streaming video information from a stream server to an access controller in said
normal mode of operation, wherein said primary head-end controller manages said
video session between said stream server and at least one access controller; and
streaming video information from said stream server to said access controller in said
failure mode of operation, wherein said secondary head-end controller manages said
video session between said stream server and said access controller.

As to claim 7, Goldszmidt inherently stores the session-state data produced by
said primary head-end controller on at least one non-volatile storage device coupled
said primary headend controller (Col. 9, lines 66-Co1.10, lines 5);

Goldszmidt does not disclose storing said session-state data produced by said at
least one secondary head-end controller on at least one non-volatile storage device
coupled to said primary head-end controller.

Ohran (Fig. 7) discloses the session-state data produced by said primary head-
end controller (server 2310) on at least one non-volatile storage device (2314) coupled

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said primary headend controller (server 2310) and storing said session-state data produced by said at least one secondary head-end controller (2320) on at least one non-volatile storage device (2315) coupled to said primary head-end controller (Col. 12, lines 7-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Goldszmidt to have the primary Gateway/TCP-Router node to store both session-state data from the secondary Gateway/TCP router and from itself, as taught by Ohran, so to increase the high-availability of the redundant system by avoiding the substantial performance degradation experienced by the non-failing server during recovering mode, as suggested by Ohran (Col. 3, lines 56-Col. 4, lines 3).

As to claim 8, Goldszmidt in view of Ohran (Col. 12, lines 7-16) further discloses replicating said stored session-state data from one of said plurality of storage devices coupled to said primary head-end controller, to each of the remaining storage devices of said plurality of storage devices coupled to said at least one secondary head-end controller; and wherein said at least one secondary headend controller retrieves said session-state data processed by said managing modules of said primary head-end controller (Ohran; Col. 12, lines 7-16) for continuing said video session with said subscriber equipment (Col. 10, lines 5-Col. 11, lines 40 of US 5918017 incorporated by reference in Goldszmidt).

As to claim 9, Goldszmidt in view of Ohran, as discussed in claim 7, does not clearly disclose the use of a "volatile memory device coupled to said primary head-end "for storing said session-state data produced by said primary head-end controller and

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storing said session-state data produced by said at least one secondary head-end controller on said volatile memory device coupled to the primary headend controller.

Official Notice is taken that using volatile memory, i.e., RAM, for the purpose of caching data is notoriously well known the art for the benefit of increasing processing performance because the latency time to access data stored in the cache (volatile memory) is much less than the latency time to access data stored in the non-volatile memory (Disk Drive). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Goldszmidt in view of Ohran to use volatile memory instead of non-volatile memory so to increase performance to have the primary Gateway/TCP-Router node to store both session-state data from the secondary Gateway/TCP router and from itself, as taught by Ohran, so to further increase the performance time and the high-availability of the redundant system during recovering mode.

As to claim 10, limitation "replicating said stored session-state data from said volatile memory device coupled to said primary headend controller, to at least one volatile memory device coupled to said at least one secondary head-end controller; and wherein said at least one secondary head-end controller retrieves said session-state data processed by said managing modules of said primary head-end controller for continuing said video session with said subscriber equipment" is further met by Goldszmidt in view of Ohran, as discussed in claims 10 and 8, in which Goldszmidt in view of Ohran's system support concurrent mirroring and consistency between the fault-tolerance servers.

As to claim 11, the claimed "In an interactive video distribution system including information..." is composed of the same structural elements that were discussed with respect to claim 1.

Claim 12 is analyzed with respect to method claim 9.

As to claim 13, Goldszmidt further discloses a primary head-end controller and at least one secondary head-end controller (Control server 1.1 of Fig. 1, col. 6, lines 7-31 in which is described in Col. 9, lines 48-52 of US 5918017 incorporated by reference in Goldszmidt, see Fig. 10 with two of Gateway/TCP-Router nodes, 1st one is 1050 configures as a primary and the 2nd one 1030 as a backup);

As to claim 14, Goldszmidt further discloses in a normal mode of operation, the primary head-end controller interacts with the stream server to provide the video information to the subscriber equipment, and the at least one secondary head-end controller remain in a standby mode; and in a failure mode of operation, the primary head-end controller is inoperative, and at least one secondary head-end controller interacts with the stream server to provide video information to the subscriber equipment (Fig. 1; Col. 5, lines 22-65 and Col. 6, lines 20-31 in Goldszmidt).

As to claim 15, Goldszmidt further discloses at least one non-distributed managing module, for processing session state data by the primary head-end controller (Executor 340, Fig. 5, Fig. 10 of US 5918017 incorporated by reference in Goldszmidt).

Claims 16 and 17 are analyzed with respect to method claims, 5, 6 and 8.

As to claim 18, in view of the above discussion, Ohran further discloses the use of a centrally networked storage device coupled to said primary server and a secondary

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server, for centrally storing the session state-data (see Fig. 2; Col. 6, lines 54Co1.7, lines 6) for the purpose of sharing.

As to claim 19, in view of the above discussion, Ohran further discloses a plurality of local storage devices, coupled to the primary server and the secondary server, for locally storing the session-state data produced by the plurality of managing module (see Fig. 7).

As to claim 20, apparatus claim 20 is analyzed with respect to method claim 8.

As to claim 21, Goldszmidt (Col. 5, lines 50-Co1.6, lines 31) in view of Ohran (Col. 11, lines 52-67) further discloses in a failure mode of operation, the at least one secondary server retrieves the replicated session-state data stored on the remaining plurality storage device, for continued interaction with the stream server to provide the video information to the subscriber equipment.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dewkett et al (5,646,676) disclose scalable interactive multimedia server system for providing on demand data.

Otani (6,418,557) discloses an on-demand system.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Annan Q. Shang** whose telephone number is **571-272-7355**. The examiner can normally be reached on **700am-400pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Christopher S. Kelley** can be reached on **571-272-7331**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the **Electronic Business Center (EBC)** at **866-217-9197 (toll-free)**. If you would like assistance from a **USPTO Customer Service Representative** or access to the automated information system, call **800-786-9199 (IN USA OR CANADA)** or **571-272-1000**.

/Annan Q Shang/

Primary Examiner, Art Unit 2623

Annan Q. Shang